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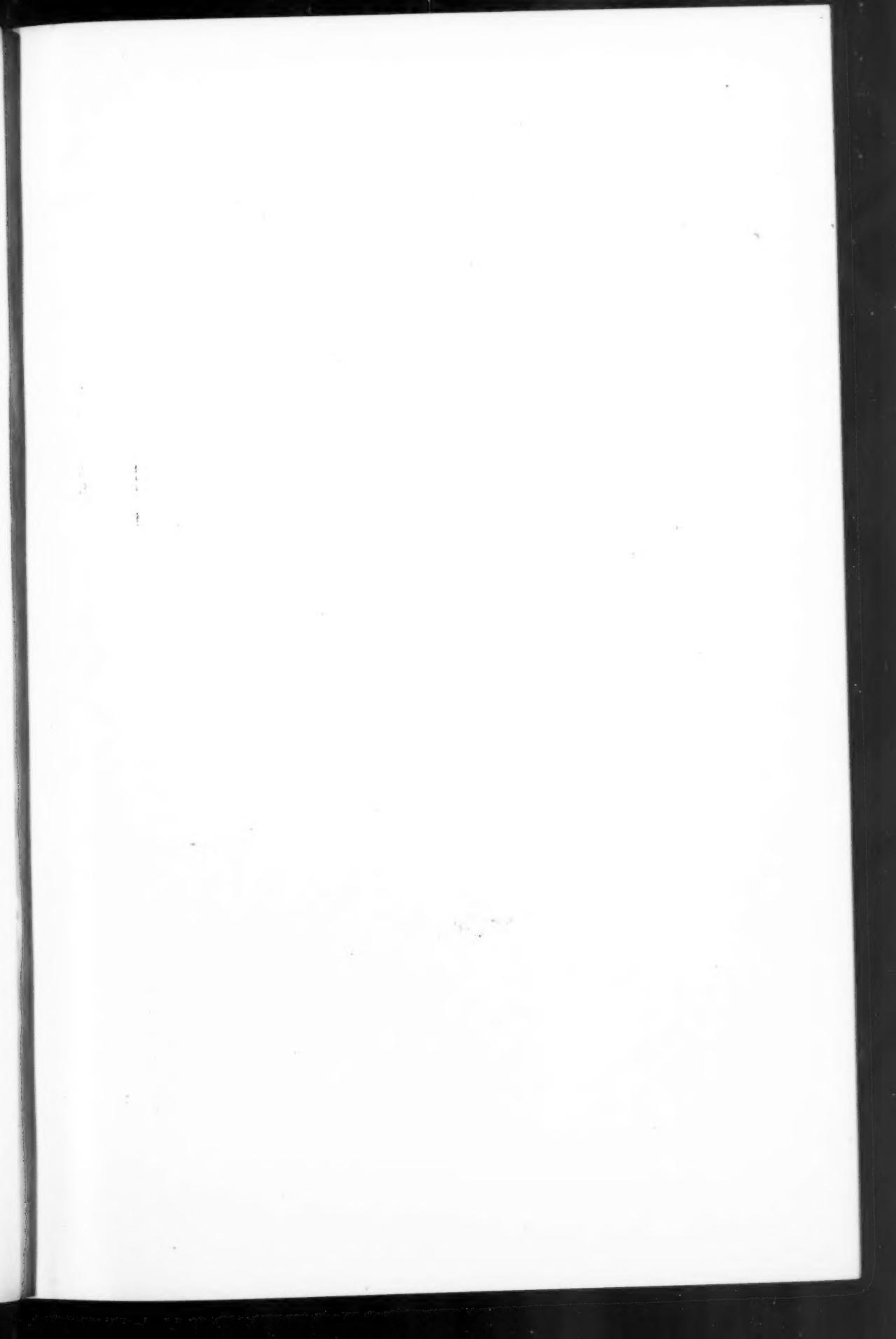
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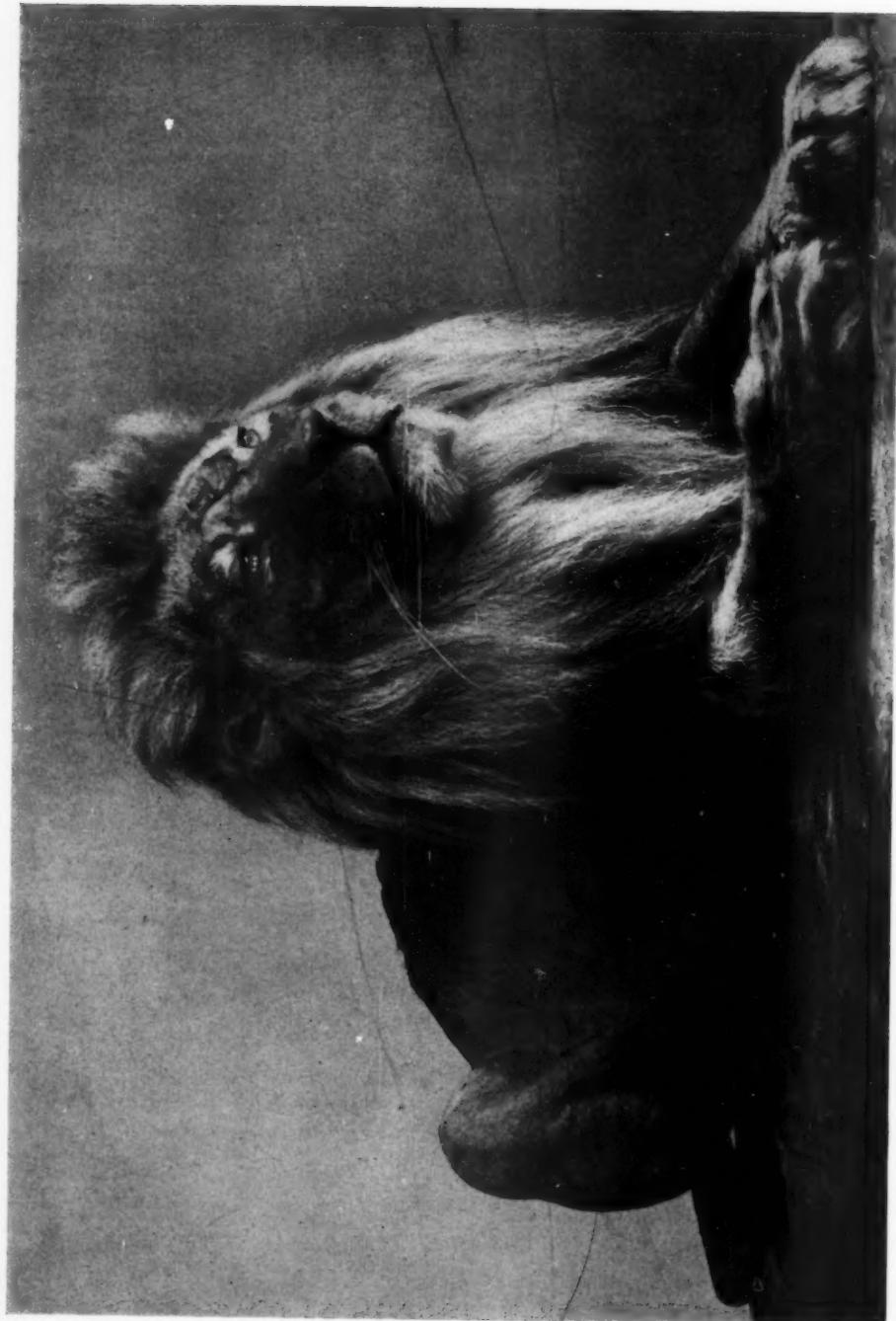
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All money received from membership fees is used for increasing the collections and for developing the educational work of the Museum.

The Museum is open free to the public on Wednesdays, Thursdays, Fridays, Saturdays and Sundays. Admittance is free to Members every day.





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THE BARBARY LION "HANNIBAL."

Modeled and mounted at the American Museum by Mr. James L. Clark

The American Museum Journal

VOL. VII

MARCH, 1907

No. 3

THE AFRICAN LION "HANNIBAL."



much favorable comment has come to the Museum regarding the illustration of the mounted lion that was issued with the announcement of the spring courses of lectures that we think that our Members will be interested in knowing how the specimen was acquired and how it was prepared and mounted.

On October 17, 1902, Miss Carnegie, daughter of Andrew Carnegie, presented to the New York Zoölogical Park an excellent example of the Barbary lion. On February 21, 1905, "Hannibal," as the lion was called, died, and the body was presented to the American Museum, through the courtesy of the Zoölogical Society. About a year later, Mr. James L. Clark, the Museum's animal sculptor, began preparations for modeling the animal. The work was completed a few weeks ago, and the lion was seen by the public for the first time at the Exhibition of the New York Academy of Sciences which was held at the Museum from December 27, 1906, to January 14, 1907. It will soon be placed on permanent exhibition.

When Mr. Clark began preparations for mounting the lion he visited the Zoölogical Park and made a study in clay from living specimens. This was prepared with great care, attention being paid to every detail of structure. After the small model had been completed, the real work of mounting began. The general outline of the animal was obtained, and the basis of the life-sized model formed, exactly as a sculptor makes an armature for a large figure. On this foundation wet clay was piled until the mass corresponded in some degree to the measurements which had been made from Hannibal in the flesh. Modeling tools in trained hands then developed the surface and reproduced with precision the contours of muscle, cord and tendon.

From time to time the skin was placed over the clay to insure an exact fit, and any imperfections in the model were corrected. When at last the desired form had been attained, a plaster mold was taken, from which a cast was made. This cast was made very thin and lined

with burlap, to combine strength and durability with the minimum of weight. After the plaster was dry, a coat of shellac was given to make it water-proof, the skin was adjusted, and the seams were neatly sewed up. Last of all, the eyes, nose and mouth were modeled,—the



COMPLETED PLASTER CAST OF LION
Ready for application of skin

most difficult and interesting part of the work, for the delicate lines require the utmost skill and closest study for successful reproduction, and the modeling here determines the whole expression of the face and the success or failure of the mount.

This, in brief, is the method which was employed in preparing the Carnegie lion for exhibition. In mounting the animal the subject has been treated from the artist's standpoint, and the effort is successful in getting away entirely from the mechanical side of taxidermy. The attitude chosen is rather unusual. The animal is represented as being in a position of rest, which gives an excellent opportunity for displaying the general anatomy which has been so carefully worked out by the sculptor.

THE NAOSAURUS, OR "SHIP-LIZARD."

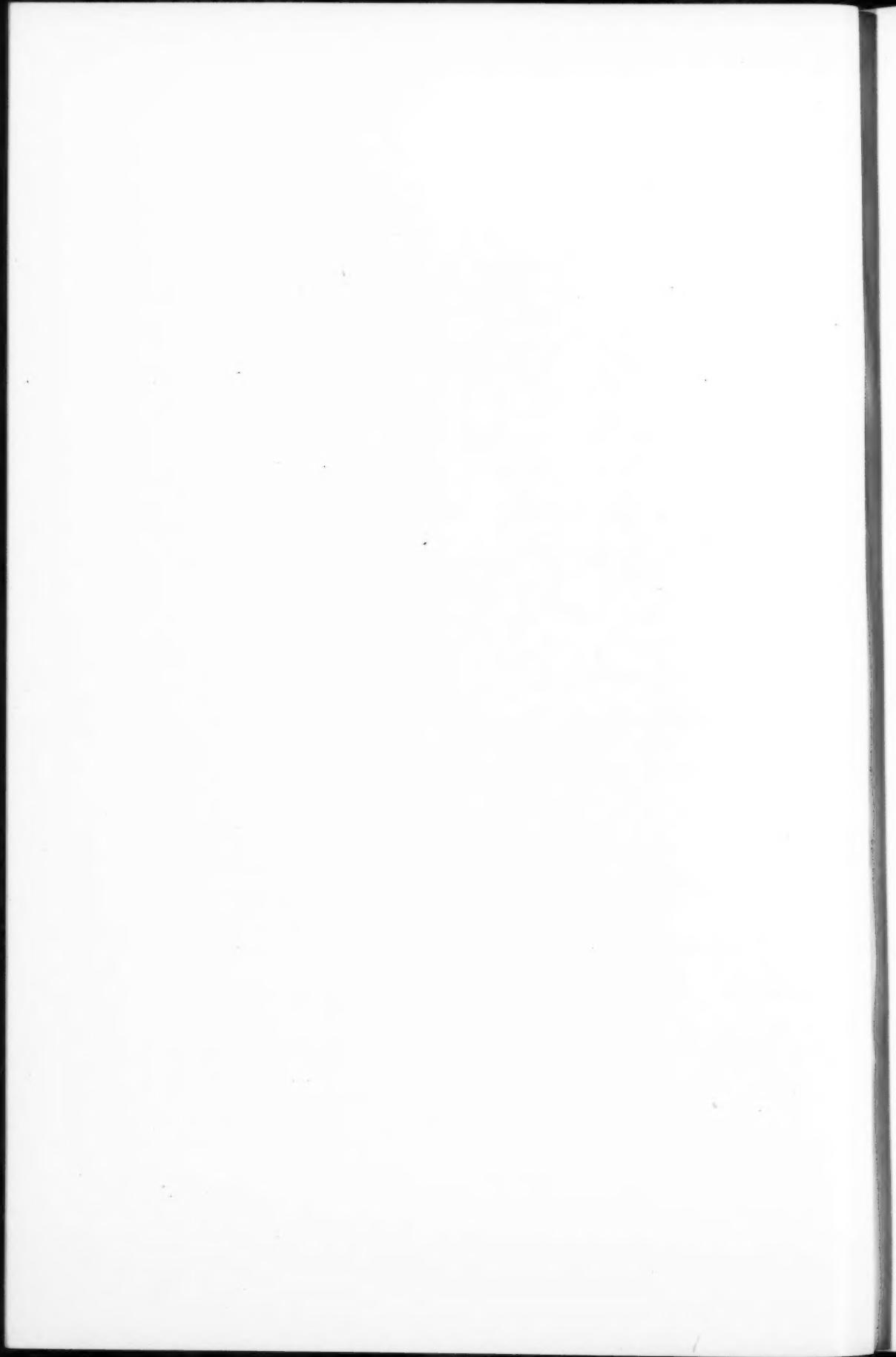


ONE of the most ancient as well as most grotesque of fossil reptiles is the Naosaurus, a skeleton of which has recently been placed on exhibition in the Dinosaur Hall. The animal was about eight feet long, a heavy-bodied, short-tailed carnivorous reptile with an enormous bony fin upon its back. The fin is composed



"HANNIBAL"

From the modeled mount in the Museum



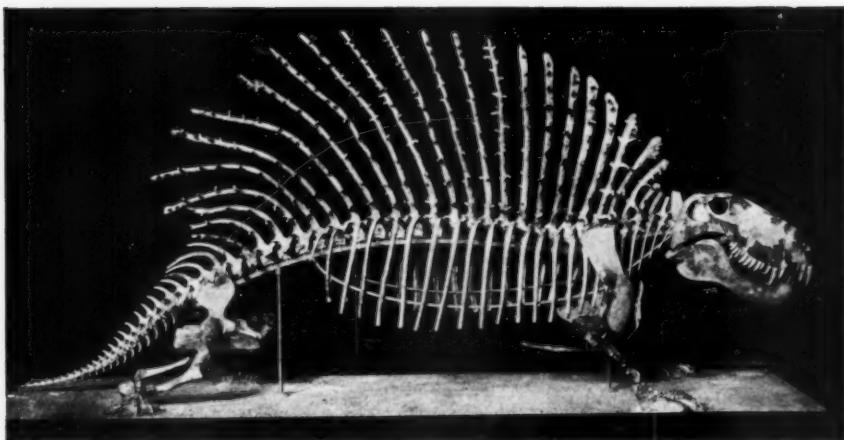
of the spines of the vertebræ greatly elongated, and each spine bears a series of little cross bars, the arrangement suggesting the masts and yards of a square-rigged ship, whence the name of Nao-saurus or "Ship-Lizard." This remarkable specimen is a part of the Cope Collection of Fossil Reptiles which was presented to the Museum by President Jesup a few years ago. The bones were collected in the Permian beds of the Wichita river region, Texas, by Charles H. Sternberg.

The spines of Naosaurus spread out like the sticks of a fan and during life were probably connected by tough, horny skin, though not covered with flesh, for without some such connecting tissue the spines might easily be wrenched out of place, dislocating the backbone, since the fin is an extension of the vertebræ, unlike the fins of fishes, which are independent of the backbone, or the crest of the Iguana, which is simply an outgrowth from the skin. Although the large sharp teeth are well adapted to seizing and tearing the animal's prey, they are curiously ill-fitting, and apparently the jaws could not be tightly closed. The under side of the body was covered with bony scales.

The use of the great back fin has not yet been satisfactorily explained. It may have served partly to protect the backbone, always the most vulnerable part in such animals, but more probably it was chiefly ornamental. Suggestions that it served to conceal the animal by resembling, to the untutored eye of its prey, the reeds and rushes among which it lurked, or as a sail to enable it to traverse the waters of the Permian rivers and lakes, need not be taken very seriously.

Although clumsy and awkward looking in comparison with the more highly developed carnivorous reptiles and mammals of later periods, the Naosaurus was the most active and powerful predaceous animal of its time. A suggestion of its fighting habits is conveyed in the injury to one of the spines in this skeleton. This was broken and displaced during life, probably in some affray, and afterwards united by a growth of false bone. Several other specimens in the collection bear marks of injuries received during life.

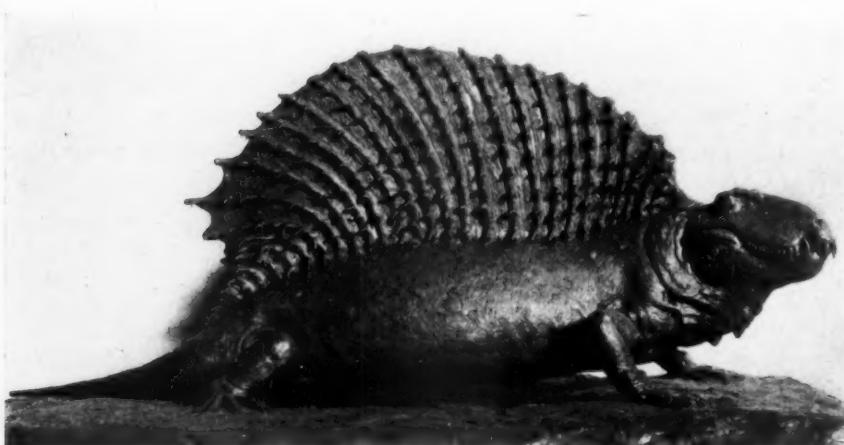
With this skeleton the Department of Fossil Vertebrates enters upon the illustration of the fauna of the Age of Amphibians, which preceded the Age of Reptiles as that preceded the Age of Mammals in the history of the earth. In the Hall of Fossil Mammals may be seen the rise and development of the various races of quadrupeds which to-day inhabit the earth; while the Dinosaurs, in the Dinosaur Hall, and the Marine



THE SKELETON OF NAOSAURUS

Cope Collection

A great, flesh-eating lizard, eight feet long, from the Permian beds of Texas.
Collected by Charles H. Sternberg. Mounted at the American Museum in 1906
by A. Hermann.



MODEL OF NAOSAURUS

Executed under the direction of Professor H. F. Osborn by Charles R. Knight
in 1907.

Reptiles, in the corridor, belong to an earlier period during which Reptiles were the dominant animals of the world, and the Naosaurus and its contemporaries of the Permian Period are of that still more ancient time when Amphibians, related to the efts and salamanders of the present day, were the dominant animals and the reptile race was in its infancy. The splendid series of Permian fossils contained in the Cope collection, together with valuable collections more recently made for the Museum, will make a remarkable exhibit of these gigantic amphibians and primitive reptiles, which have heretofore been imperfectly known.

The extreme remoteness of this period may be judged from the estimate that the Naosaurus lived twelve million years ago, or twice as long ago as the Brontosaurus, six times as old as the Four-Toed Horse and two hundred times as old as the Mammoth and the Mastodon or the oldest traces of fossil Man.

The scientific description of the Naosaurus skeleton by Professor Osborn will shortly appear in the Bulletin of the Museum.

A NEW ESKIMO EXHIBIT.



THROUGH the great amount of excellent material brought in from the many expeditions to the Far North made by Commander Robert E. Peary, U. S. N., and the extensive whaling cruises of Captain George Comer the American Museum stands preëminent among all institutions along the lines of ethnological research amid Arctic peoples. The completeness of the material and data thus assembled has enabled the Museum to install a series of groups and cases which illustrate vividly the home and village life of the Central Eskimo, together with their utensils, implements and weapons and the methods of using them.

A large free space has been formed at the north end of the North Hall on the ground floor of the building near the entrance to the auditorium by removing two of the tall pier cases and substituting lower cases which are better adapted to the display of the material used. One result of the change is that from any point within the area the visitor may obtain a clear general idea of the whole exhibit. Resting places for visitors have been provided in the shape of two skin-covered sledges which were among the number used by Mr. Peary in his arctic work.

An imagination that is vivid enough to eliminate the comforts of the exhibition hall would enable a person, sitting upon one of these sledges to think himself among the interesting inhabitants of the land of cold



INTERIOR OF ESKIMO IGLOO

From group in Hall No. 108

and snow,— the land of the midnight sun in summer and of darkness in winter, save for the brilliant moonlight and the aurora borealis.

A general glance at the exhibit leads to an appreciation of the bleak characteristics of the land of the Eskimo. Almost no wood is to be seen,

most of the objects having been made from some part of an animal, and bone, horn, tusk and skin have been ingeniously made to serve every purpose. The seal-oil lamp has been devised for giving light and heat.

Methods of manufacture are illustrated by life-sized figures of men



ESKIMO WOMAN FISHING THROUGH THE ICE
From group in Hall No. 108

and women making or mending harpoons, harness, sledges and garments. The practically complete absence of metal from the region leads to the employment of thongs in joining bits of wood or bone for making sleds, boxes and boats. The stray bits of precious iron or steel obtained by barter are used only for weapons or tools.

Vegetation in Eskimo lands is extremely scanty and is almost exclu-

sively confined to mosses, rushes or, in some localities, a few low shrubs, none of which are suitable for the food of human beings. The environment, therefore, drives the Eskimo to hunting and fishing as a means of livelihood, and the center of the space is occupied by a small modeled group representing a man in the act of harpooning a seal, while a woman crouching by his side is a vitally interested spectator. The providing of food being the chief problem of existence in these far northern regions, two life-sized groups have been installed at the north side of the exhibit which typify two aspects of the universal occupation. One of these groups represents the interior of an igloo or snow house, where a woman is cooking by means of a seal oil lamp, while a child is creeping about the floor; the other group shows a woman fishing through a hole in the ice, under the lee of a wall of snow blocks which protects her from the cold, biting winds.

In spite of their adverse environment the Eskimo have developed a love for art, as is shown in the case devoted to carvings and engravings in ivory and bone. The walls and case fronts of the alcove are decorated with skulls, tusks and horns of the walrus, narwhal and wild reindeer, while the figure of a man in hunting costume in a kayak has been placed on top of one of the cases. An additional pleasing feature of the new installation is the arrangement of concealed electric lamps within the cases, by means of which a diffused but ample light is thrown on the specimens.

MUSEUM NEWS NOTES.

The annual meeting of the Board of Trustees of the Museum was held at the Metropolitan Club, Monday evening, February 11. The officers of 1906 were re-elected, namely:

President, MORRIS K. JESUP,
First Vice-President, J. PIERPONT MORGAN,
Second Vice-President, HENRY FAIRFIELD OSBORN,
Treasurer, CHARLES LANIER,
Secretary, J. HAMPDEN ROBB,
Director, HERMON C. BUMPUS.

In addition to the routine business of the meeting, a vote of thanks was passed to the members of the Peary Arctic Club for their generosity

in presenting to the American Museum of Natural History the valuable collections made by Commander Robert E. Peary, U. S. N., on his recent expeditions to the Arctic under the auspices of the Club, and Miss Maria R. Audubon and Miss Florence Audubon were elected Life Members of the Museum in recognition of their gift of valuable sketches, drawings, plates and personal trophies of the ornithologist, John James Audubon.

A CABLEGRAM from Professor Osborn announces the auspicious starting from Cairo, on January 30, of his expedition into the Desert of Fayoum. He goes with valuable coöperation on the part of the Egyptian government and has every prospect of achieving important scientific results. Professor Osborn and two of his assistants in the Department of Vertebrate Palaeontology left New York on January 5, as related in the February JOURNAL, to explore certain portions of the Fayoum desert for fossil mammals needed to fill gaps in the series illustrating several lines of evolution.

THE material brought back by Commander Robert E. Peary, U. S. N., was removed from the ship "Roosevelt" to the Museum during the latter part of January. This material, which comes to the Museum as the gift of the Peary Arctic Club, adds a large number of particularly desirable specimens to the collections from the Far North. Magnificent skulls and skeletons of walrus, narwhals, seals and musk oxen, an entire herd of pure white reindeer (a new species which has been named *Rangifer pearyi* by Professor Allen), clothing and implements of household use, hunting and fishing and sledges are among the items of this collection. The most interesting single piece from the popular point of view is perhaps the sledge with the help of which the new farthest north record was made and which Mr. Peary has christened the "Morris K. Jesup."

THE collection made by the Tjäder Expedition into British East Africa was received at the Museum during January. This material, which is wonderful in the extent, variety, size and perfect condition of its specimens, fulfills the announcements of success already made. A friend has made it possible for the Museum to acquire this collection, and it will receive full description in a subsequent issue of the JOURNAL.

A COLLECTION of fossil leaves from the Fort Union beds of Tertiary time has recently been received at the Museum. The specimens were gathered by Mr. Barnum Brown and his assistants in central Montana during the field season of 1906. The collection, which is said by Doctor F. H. Knowlton of the National Museum, a high authority on palæobotany, to be the finest he has ever seen from this deposit, comprises many remarkably fine examples of twenty-one known species belonging to fourteen genera, besides several new genera and species. Aside from its value from the point of view of the palæobotanist, the collection has great importance as a means of separating several geological horizons. The Fort Union beds contain beds of lignite, or brown coal, which are an important source of fuel. In some places this lignite has been ignited by spontaneous combustion or through some other natural agency, and the fires have burned for an unknown length of time, baking and fusing the clays above and below the coal until they look like brick, slag or volcanic scoriæ. Specimens of this material also were brought in by the expedition.

THE International Exhibition of Safety Devices which was open in the power room and adjacent corridor from January 29 to February 9 was the first affair of the kind ever held in this country, and it attracted a large number of visitors. There were about 300 entries of exhibits comprising all sorts of contrivances for the prevention of accidents and of injury from unavoidable accidents in street, house and factory. In connection with the exhibition lectures were delivered on February 1, 4 and 7 by Dr. W. H. Tolman upon "European Museums of Safety Devices and American Industrial Betterment," while on February 11 Dr. Josiah Strong lectured on "Safety for American Life and Labor."

THE legal holiday lecture of New Year's Day was given by Mr. Frank M. Chapman upon the topic "The Home Life of Flamingos" and was illustrated with some of the remarkable photographs from nature a portion of which were used in making up the flamingo group. The lecture on Washington's Birthday was by Mr. Harlan I. Smith upon "The Five American Nations: Conquerors of the Snow, Forest, Mist, Desert and Plain." The attendance at the four lectures given on the principal holidays of the winter was 2710, indicating the hold that this course has upon the public.

THE West Side Natural History Society held a special meeting in the West Assembly Hall of the Museum on the evening of February 7, when Mr. B. S. Bowdish of Demarest, New Jersey, gave an illustrated lecture upon "The Birds of Demarest, New Jersey."

During February, Mr. Frank M. Chapman delivered a series of eight lectures in the Lowell Institute Course at Boston. His topic was "The Distribution of Bird Life in North America."

THE annual meeting of the Board of Directors of the Audubon Society of the State of New York was held at the Museum Thursday afternoon, January 17.

LECTURE ANNOUNCEMENTS.

MEMBERS' COURSE.

THE second course of lectures for the season 1906-1907 to Members of the American Museum of Natural History and their friends. The programme is as follows:

Thursdays at 8:15 P. M.

February 21.—FRANK M. CHAPMAN, "The Birds of Spring."

February 28.—RICHARD TJÄDER, "Hunting Big Game in British East Africa."

March 7.—FREDERIC A. LUCAS, "Whales and Whaling."

March 14.—E. O. HOVEY, "Earthquakes; Their Causes and Effects."

March 21.—CLARK WISSLER, "Living with the Indians of the Plains."

PUPILS' COURSE.

	Mar.	Apr.	
Monday,	4	8.	"Along the Historic Hudson." By G. H. Sherwood.
Wednesday,	6	10.	"Life in the Far North." By H. I. Smith.
Friday,	8	12.	"New York City in Colonial Days." By R. W. Miner.
Monday,	11	15.	"The American Indians of today." By G. H. Pepper.
Wednesday,	13	17.	"Commercial Centers of Europe." By E. O. Hovey.
Friday,	15	19.	"Farming and Ranching in the United States." By G. H. Sherwood.

	Mar.	Apr.	
Monday,	18	22.—	"Travels in South America." By Barnum Brown.
Wednesday,	20	24.—	"Natural Wonders of our Country." By R. W. Miner.
Friday,		5	"The Products of Our Mines." By E. O. Hovey.

This course of lectures is open to public school children accompanied by their teachers and to the children of Members of the Museum on the presentation of membership tickets. Particulars of the course may be learned by addressing the Director of the Museum.

PEOPLE'S COURSE.

Given in coöperation with the City Department of Education.

Tuesdays at 8 P. M.

A course of five lectures on the "Far Eastern Question" by MR. ELWOOD G. TEWKSBURY, American Board of Missions, New York City.

March 5.—"The White Peril."

March 12.—"The Siege of Peking."

March 19.—"The Yellow Peril."

March 26.—"The New Far East."

April 2.—"Asiatic-American Reciprocity."

Saturdays at 8 P. M.

A course of nine lectures on "Electricity and Electrical Energy" by PROFESSOR JOHN S. MCKAY of Packer Collegiate Institution, Brooklyn.

March 2.—"Relation of Electricity to Matter,—the Electron Theory."

March 9.—"Relation of Electricity to Energy. An Electric Charge and an Electric Current."

March 16.—"Electric Currents, or Electricity in Motion."

March 23.—"Thermal Relations of Electric Currents."

March 30.—"Chemical Relations of Electric Currents."

MEETINGS OF SOCIETIES.

The meetings of the New York Academy of Sciences and Affiliated Societies will be held at the Museum during March as usual. The programmes are issued in the weekly "Bulletin" of the New York Academy of Sciences and sent to the members of the several societies. Members of the Museum on making request of the Director will be provided with these circulars as they are published.

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The American Museum Journal

EDMUND OTIS HOVEY, *Editor*

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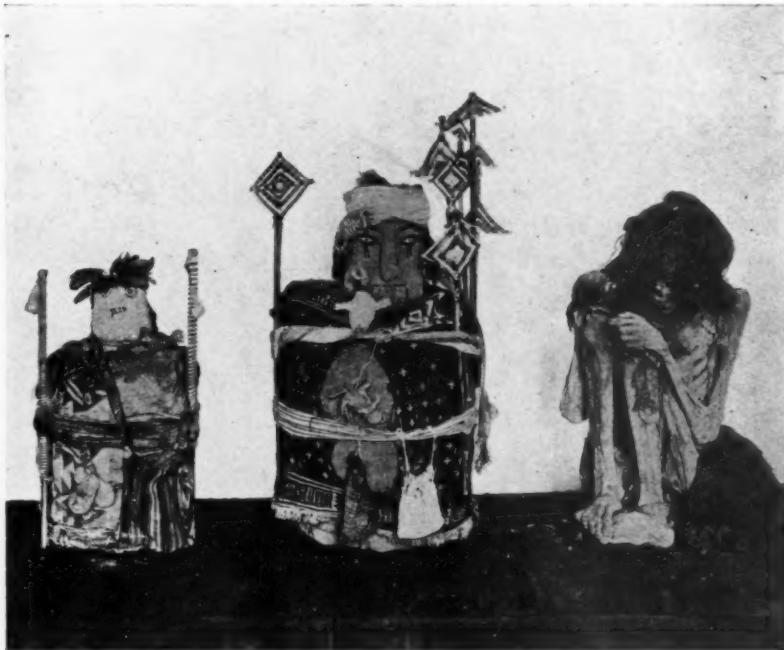
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AMERICAN MUSEUM OF NATURAL HISTORY

Peruvian Mummies

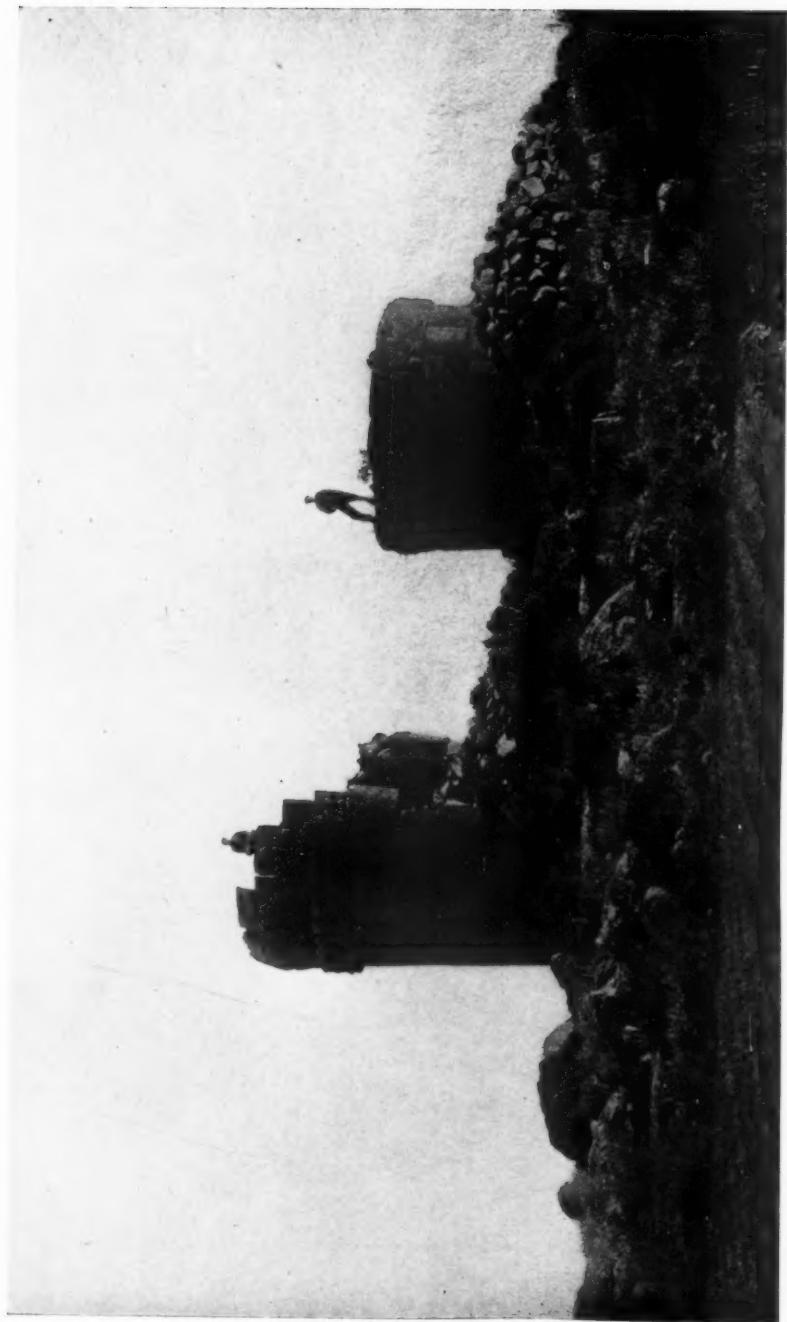


By **CHARLES W. MEAD**

Department of Ethnology

GUIDE LEAFLET NO. 24

MARCH, 1907



CHULPAS, OR BURIAL TOWERS
Sillustani, Peru

Peruvian Mummies

AND WHAT THEY TEACH

A GUIDE TO EXHIBITS IN THE PERUVIAN HALL

By CHARLES W. MEAD

DEPARTMENT OF ETHNOLOGY

NO. 24

OF THE

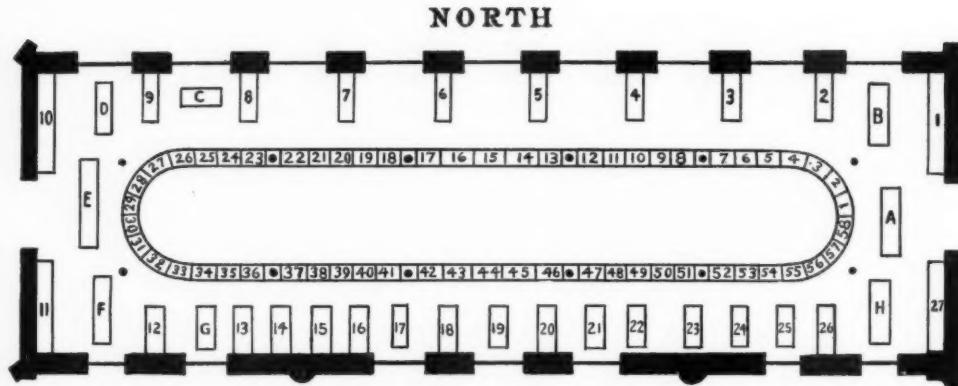
GUIDE LEAFLET SERIES

OF THE

AMERICAN MUSEUM OF NATURAL HISTORY

EDMUND OTIS HOVEY, EDITOR

New York. Published by the Museum. March, 1907



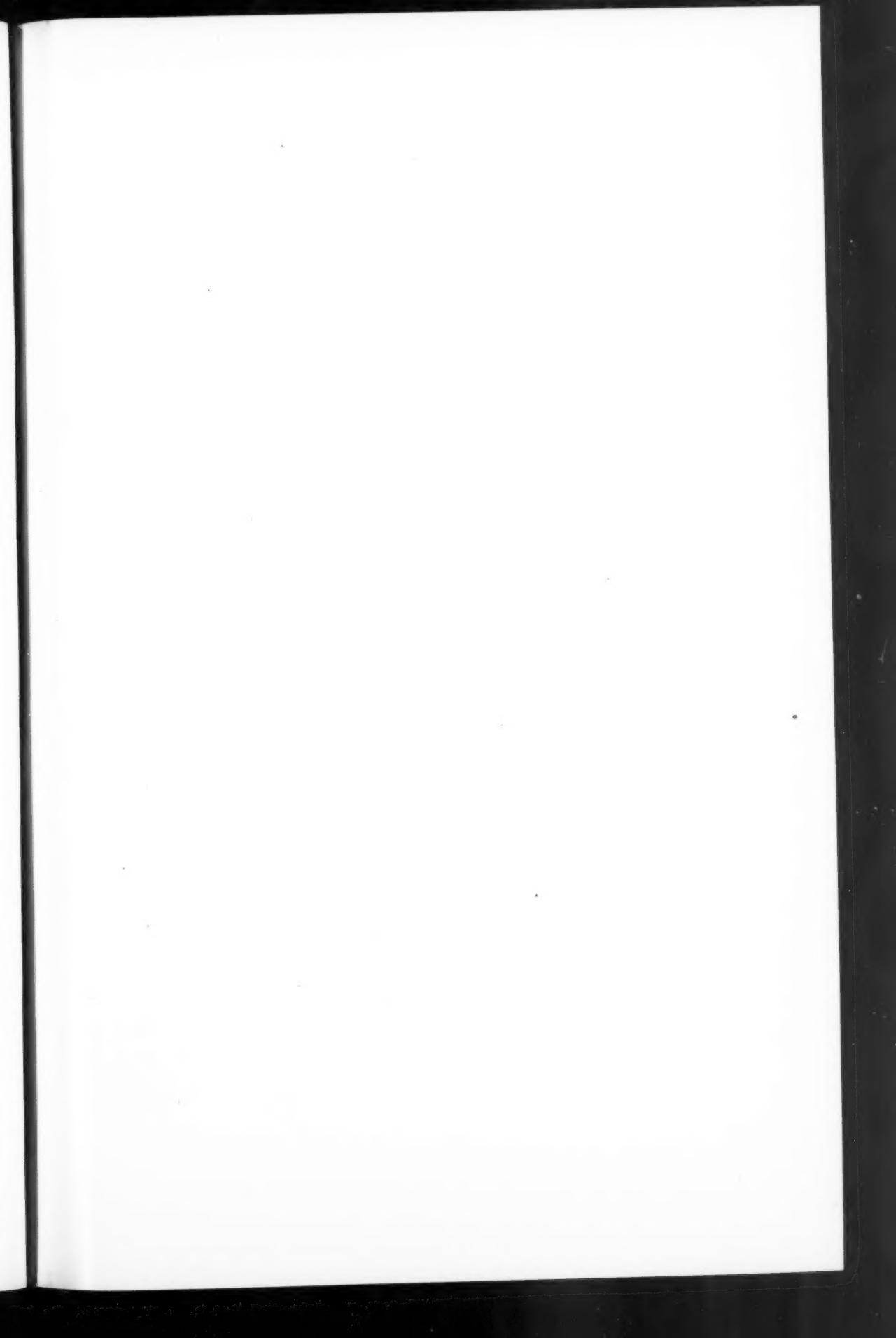
PERUVIAN HALL NO. 302.

Gallery Floor, West Wing.

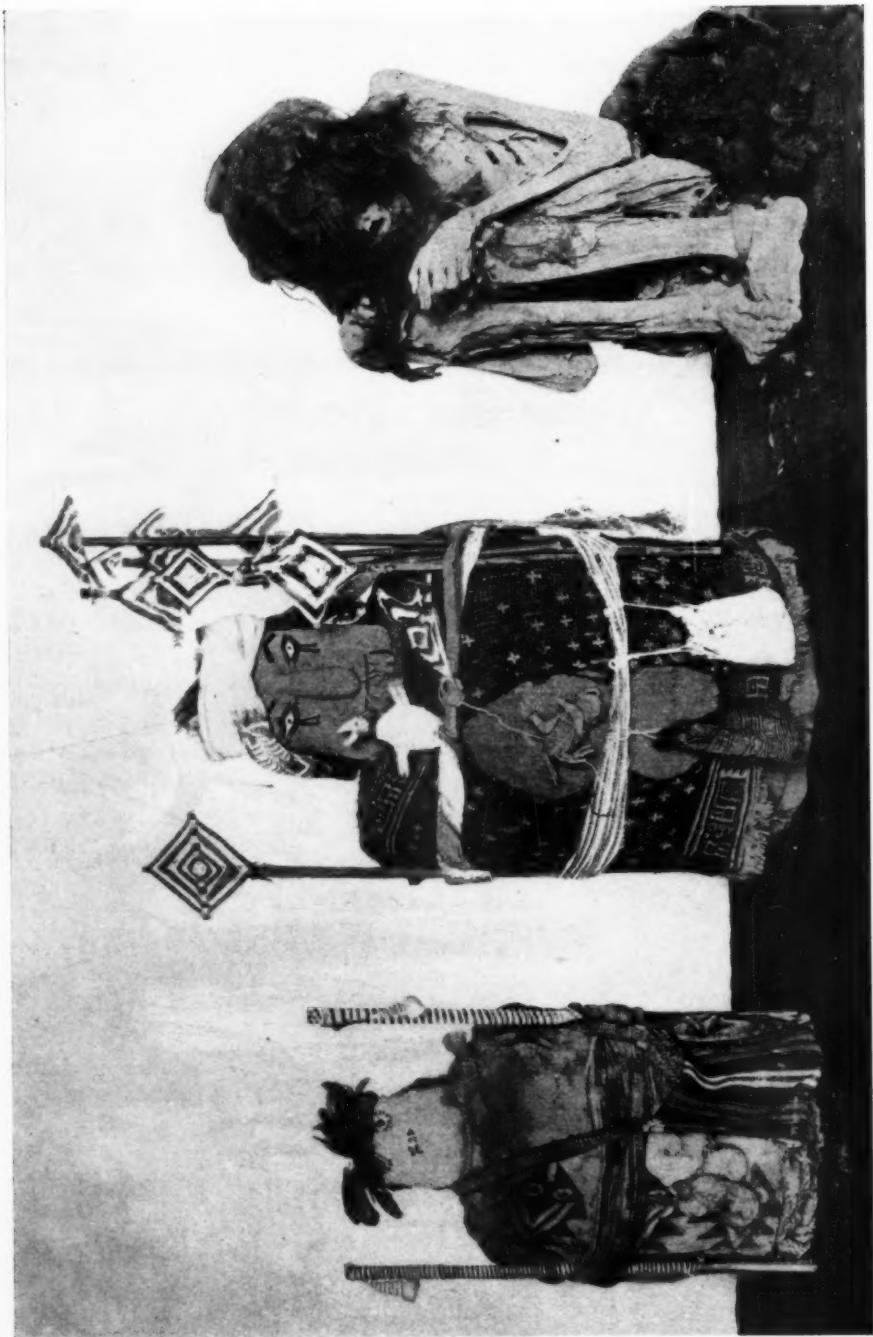
**PRESENT LOCATION OF THE OBJECTS DESCRIBED IN THIS
LEAFLET.**

	CASE
Mummy bundles	U 27
Mummies	U 27
Prayer sticks	R 4-5
Mummified animals	U 27
Trephined skulls	U 26
Skull Collection	U 26
Implements of war and the chase	U 21
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Baskets, mats and nets	R 17-18
Cloths	U 1
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Quipus, or Record Fringes	R 1, 2
Coca leaves and outfit for chewing	R 11
Pottery	U 9, 10, 11, 12 and D, E, F
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"U" refers to the upright cases; "R," to the railing cases.



PERUVIAN MUMMY BUNDLES AND MUMMY



PERUVIAN MUMMIES AND WHAT THEY TEACH.

BY CHARLES W. MEAD,

Department of Ethnology.



NCIENT Peru, the land of the Incas, comprised not only the region included within the present Republic of Peru, but also the greater part of Ecuador, Bolivia and Chile and was about equal to that portion of the United States lying east of the Rocky Mountains. The Incas proper were a powerful tribe of warlike people inhabiting the great central plateau, from which dominating position they extended their conquest in all directions. They developed a much higher order of civilization than was found in other parts of the continent by the early European explorers, and the empire under their sway included many tribes speaking different dialects.

The history of the Ancient Peruvians must to a large degree be read in their graves, since they left no written records and the Spanish conqueror destroyed many of their cities and suppressed their customs. Like many other peoples the Peruvians bestowed much tender care on their dead, carefully preparing them for burial and placing with them in the ground many objects which were dear to them in life. Methods of burial are so intimately connected with the religious and other customs of a people that in the absence of other sources of information a study of graves or tombs may be expected to lead to important results. Fortunately for the archæologist, climatic conditions in some parts of Peru are such that "burials" have been well preserved. The region west of the Peruvian Cordillera, a narrow strip along the coast, is in the main a desert, the only fertile spots being the narrow valleys of the small rivers flowing down to the Pacific.¹ The tombs and graves are usually found on elevated places outside of the valleys where the extreme dryness of the air combines with the nitrous character of the sand, into which moisture has seldom found its way, to desiccate and preserve the bodies of the dead thus mummifying them naturally. The same factors have

Importance of the Burials

¹ The visitor is referred to the relief map of South America on the left as he enters the hall for a clear exposition of the topographic features of the region.

caused the clothing and objects placed with the dead to be preserved for many centuries.

As a rule the bodies were prepared for burial by placing them in a sitting position with the knees drawn up and the head and hands resting upon them, as is shown in the right-hand figure on page 6. Sometimes,

Preparation for Burial however, as appears from burials in the Chira Valley, in the extreme northwest of Peru, the body was extended at full length. A few of the extended bodies have been found in other parts of the country, and two examples of this form from Sureo, Peru, are in the collection. After the body was placed in position, it was enveloped in wrappings of various kinds. Sometimes the body was covered with fine cotton cloth, over which were placed finely woven blankets or ponchos of the wool of the vicuña or the alpaca, with designs in various colors.

The body and its wrappings were bound together by a net-work of stout cord of vegetable fibre; by a piece of strong cloth sewed together in the form of a closed sack, or in some localities by a casing of woven rushes. The "mummy bundle" was surmounted by the so-called "false head," which was sewed to its upper surface. The significance of this practice is unknown. These false heads, many of which are present in the collection, were made of cloth and filled with different vegetable substances. The face was represented in various ways:

Mummy Bundles sometimes by a mask of wood or clay, but often the eyes, nose and mouth were made of wood, shell, gold or silver and fastened directly to the cloth by means of thread. To the outside of the mummy bundle were often attached several of the prayer sticks or sepulchral tablets which are frequently found in considerable numbers in the sand about the grave. These are either in the form of a cross wound with variously colored yarns, or a framework of split reeds, covered with cloth upon which rude designs are painted. Favorite animals were sometimes buried with the dead as is shown by the mumified bodies of a dog and a parrot in the collection.

The manner of interment of the mummy bundle and its accompaniments differed in various localities. In the coast region many of the **Huacas** mummies are found in little vaults, or "huacas," of adobes or flat stones roofed with sticks or canes, overlaid with mats or a layer of rushes, which prevented the earth covering from filling the grave. These vaults usually contain from one to four bodies.





NATURALLY MUMMIFIED BODY

Copper Mine at Chuquicamata, Chile

Burials in stone towers or "chulpas" seem to have been confined chiefly to the Aymará Indians of the Callao, the great plateau of the Andes which includes the basin of Lake Titicaca and lies between the two maritime cordilleras and the eastern range, out of which rise the lofty volcanic peaks of Illimani and Sorata. In plan these chulpas are either circular or rectangular and are spoken of as round or square towers. A round burial tower is shown on page 2. Dr. von Tschudi found chulpas in the Department of Junin, which may have been built by Aymará *mitimaes*, or translated colonies. Describing the burial towers near Palca, E. G. Squier says:¹ "Primarily these chulpas Chulpas consisted of a cist, or excavation, in the ground about four feet deep and three feet in diameter, walled up with rough stones. A rude arch of converging and overlapping stones, filled in or cemented together with clay, was raised over this cist, with an opening barely large enough to admit the body of a man, on a level with the surface of the ground, towards the east. Over this hollow cone was raised a solid mass of clay and stones, which, in the particular chulpa I am now describing as a type of the whole, was 16 feet high, rectangular in plan, 7½ feet face by 6 feet on the sides. The surface had been rough-cast with clay, and over this was a layer of finer and more tenacious clay or stucco, presenting a smooth and even surface."

One of the most remarkable specimens that the Department of Ethnology has acquired is a naturally mummified body which was found in an old copper mine at Chuquicamata, Province of Antofagasta, Chile, and which is illustrated on page 10. The condition of the body shows that the unfortunate miner was caught by a cave-in of the roof and partly crushed. The mummification seems to have been produced in part by the action of copper salts and not to have been altogether a desiccation due to the dryness of the region. The skin has not collapsed on the bones, as in the mummies found usually Natural Mummy in the region, but the body and limbs preserve nearly their natural form and proportions, except for the crushing already mentioned. No analysis has yet been made of the tissues, so that it is too early to hazard any supposition as to the chemical changes which they have undergone. Mines in this neighborhood have been worked for an unknown length of time upon a peculiar deposit of atacamite, a

¹ Squier's Peru, p. 243.

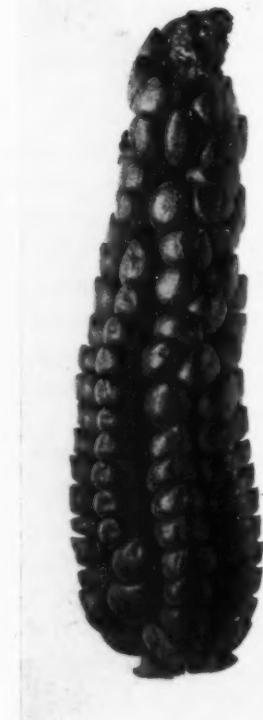
hydrous chloride of copper, which is much prized on account of its easy reduction. The age of the mummy is unknown, but it is supposed to be pre-Columbian.

The story told by the objects found with the Peruvian dead is in part
Weapons and the story of ancient Peruvian life. The objects in the
Implements Peruvian collection in the hall, most of which have

come from graves and mummy bundles, have been arranged so as to tell part of this story. For example we find with the bodies of men slings for throwing stones, stone-headed clubs and bolas (rounded stones joined by cords), showing the weapons and implements of war and the chase. With the mummy bundle of the woman have been found work-baskets, filled with threads and yarns of various colors, needles of thorn and copper, the implements used in weaving, such as spindles and shuttles, or the stones used in smoothing and polishing the outside of pottery vessels. Woman's work in ancient Peru is indicated by the presence or absence of objects familiar to us of the present day. Corn, beans and other foods were usually placed beside the body in the grave, together with vessels used in eating and drinking. These objects indicate not alone the belief of the people in a future world and the necessity of sustaining the spirit in its

journey thereto, but they also show that the people were well advanced in agriculture, and we are enabled to determine the kinds of plants cultivated and in many cases even the methods by which they were prepared for use.

Furthermore the objects found in the graves prove that in the working of copper, silver and gold the ancient Peruvians take high rank, and



EAR OF CORN. FOUND WITH A MUMMY



CUP OF BEATEN GOLD AND STRING OF GOLD BEADS



show that the people knew how to exploit and treat the ores occurring in their land. Among copper implements there may be seen in the collection a great variety of spear points, club-heads, digging and planting implements, knives and axes. Tweezers are among the most familiar objects from the graves, and are often found suspended from the neck of a mummy by means of a cord.

Some of the most notable of the gold objects are a cup beaten from a single piece, and ornamented in repoussé-work; human and animal figures, both solid and hollow, and beads and pins. The illustration on page 13 shows the gold cup and a string of large gold beads. In silver there are cups and vessels which, like the gold cup, are beaten from single pieces and are often ornamented with human or animal figures and other designs. Silver tweezers in many fanciful forms, pins and a variety of ornaments have been found in and with the mummy bundles. These objects prove that the makers were familiar with the processes of casting in moulds, beating and soldering. Many of the hollow figurines were made in three or more pieces and the parts soldered together.

Another remarkable class of objects is to be found on the right as one enters the hall. Here are many garments and pieces of cloth which were found wrapped around the dead or deposited in the graves. A glance at this part of the collection will show the ancient Peruvians had great skill in the art of weaving. Upon closer examination it will appear that they were familiar with most of the weaves known to modern people, from the finest gobelins to the coarsest cotton cloth. Many of the specimens cannot be excelled at the present time. The looms used were of the simplest description, consisting of two cross-sticks, one at the top, and the other at the bottom. The warp threads were stretched from one to the other, while the woof or filling was passed over and under these by a shuttle. So the weaving of these most perfect fabrics may be said to have been by hand. In this respect they may stand in contrast to the modern machine methods. In addition to the excellence of weave Peruvian cloth is unique in decoration. The designs are woven in and consist of geometric figures and conventionalized representations of men, pumas, jaguars and various kinds of birds and fish. Some of the forms are illustrated on page 16. A part of the decorative effect is due to the regular repetition of the same design in different colors.

Use of
Copper

Gold and
Silver

Cloth and
Weaving

That the Peruvian should also take high rank as a potter will be gathered from even a superficial study of the collection of all forms of pottery at the west end of the hall, since many of the vessels show real beauty of outline and form and excellence in their painted decoration. These qualities seem the more remarkable when we consider that the

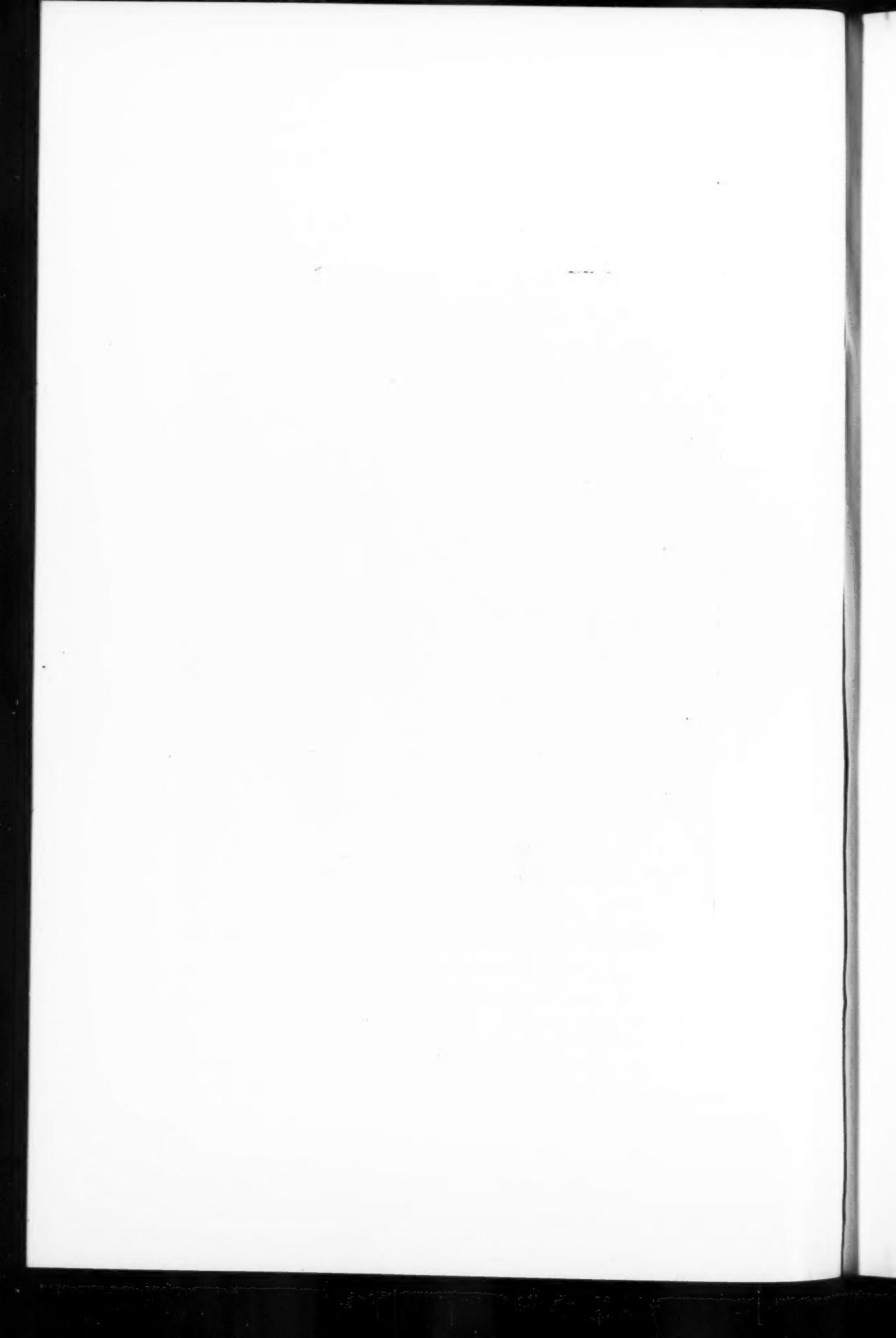


PIECES OF CLOTH FOUND WITH MUMMIES

makers had no knowledge of the potter's wheel and were unacquainted with the art of glazing. Some of the vessels were shaped by **Pottery** hand, but others show that they were formed by means of moulds. The body was moulded in two parts which were joined by being pressed together. Spout or handle, if desired, was then attached, and all irregularities in the junctures remedied by scraping and rub-



POTTERY WATER-JAR WITH CORN DECORATION



bing. Moulds were often used in making many of the animal heads and human figures that adorn these vessels. The decoration was put on with paint, and, after firing, the vessels were polished by rubbing with a smooth pebble.

In the absence of an aboriginal written language in Peru and on account of the meagreness of the descriptions left by the first Europeans who visited the country, it is fortunate for the student of Peruvian archaeology that the potter often represented by the shape of his vessel or in its



POTTERY VESSEL WITH PAINTED DECORATION

decoration forms and customs which were familiar to him in his everyday life.

Representations of the human figure are common. Some of these show the manner of wearing the poncho and other articles of clothing. Some have in the lobe of the ear the large cylindrical ear-ornaments which led the Spaniards to nickname these people "Ore-jones"—big ears. It would be impracticable, however, to mention here more than a few of the subjects depicted. On one vessel a man pursues and kills a deer with a spear; on another a hunter is returning with the body of a deer thrown across his shoul-

Human
figures

ders. Some jars show the manner of catching fish by means of hook and line, while others portray men and women carrying water jars and other burdens by means of a strap passing around the forehead. Here we see a man with his favorite bird, evidently of the parrot family, perched upon his shoulder; there a dance in progress, with several of the figures playing upon musical instruments.

These potters were very fond of moulding their clay into animal forms, and they have left us more or less truthful representations of many of the species familiar to them. Their favorite models appear to

Animal figures have been the puma, jaguar, monkey, llama, Guinea-pig, lizards, birds of the parrot family, the king vulture and a number of shells and vegetable forms. A complete list would include most of the animal and many of the vegetable forms of Peru.

Everywhere, except in the most elevated parts of the country, maize was not only the staple food of the people, but also was the source of their favorite intoxicating beverage,—*chicha*; hence it was but natural that they should so often represent the grain on their vessels. This

Chicha was very simply and perfectly accomplished. A mould was made from an ear of corn and dried in the sun or fired. Into this clay was pressed; which on being removed would be a facsimile of the ear. This was joined to the jar while both were still in a plastic condition, after which the whole was fired and polished. A corn jar is represented in the illustration on page 17.

Although this guide relates chiefly to burials, it may not be out of place to call attention to some peculiarities of Peruvian skulls. The skulls of all races are of great scientific value, but those of Peru are of particular interest, because many of them bear the marks of surgical or

Trephined skulls sacrificial operations. The Museum collection of Peruvian skulls is so extensive that only a representative series is on exhibition. This contains many examples showing trephining, artificial deformation and pathological conditions, together with several normal Peruvian skulls for purposes of comparison.

In Peru, where stones from slings and wooden clubs with heads of stone and copper were the common offensive weapons, complex fractures of the skull with depression of its bony plates must have been common. There seems no reason to doubt that trephining was resorted to as a means of relief in such fractures, and that sometimes cures were effected by this treatment. It is also probable that the operation in many



TREPHEINED SKULLS FROM ANCIENT PERUVIAN GRAVES



cases was a part of some religious ceremonial, since some of the trephined skulls in the collection show distinct orientation of the wound and present no indication of lesion. Implements of copper and bronze and knives of stone and obsidian must have been employed in the operation, which was performed with skill.

Artificial deformation of the head was extensively practised in ancient Peru and was accomplished by means of ligatures applied in infancy. The form taken by the head was determined by the manner in which these bindings were applied. The pathological skulls show the ravages of disease in the bones of the cranium.

THE QUIPU.

The Quipu is a fringe consisting of a main cord with other cords of various colors hanging from it. In the fringe knots of different kinds were tied. The ancient Peruvians, having no written language, made use of the quipu to keep their accounts and possibly to record historic incidents. By the color of the cord, the kind of knot, the distance of the knots from the main cord and from each other, many facts could be recorded and preserved. The maker of a quipu had a system which was to a great extent arbitrary, and which had to be explained when the quipu was placed in the keeping of another.

COCA CHEWING.

The coca plant (*Erythroxylon coca*, Lam.) grows wild in the mountainous regions of Peru and Bolivia and was cultivated before the Conquest, as it is to-day, in districts from 2,000 to 5,000 feet above the sea. It is valued for its stimulating narcotic properties, and the present Indians will often carry heavy burdens for several days without food, if furnished with a plentiful supply of coca. The leaves are gathered and dried in the sun and then chewed mixed with unslackened lime in the same way the betel is used by the East Indians. A bag of coca leaves is almost always found with a mummy. The leaves of this plant, together with the cloth bags in which they were carried and the gourd flasks containing lime may be seen in the collection.

MISCELLANEOUS EXHIBITS.

This gallery contains many exhibits, some of them very important, of which no special mention has been made, since it is believed that the case labels and the guide leaflets attached to the cases will furnish the desired information to the student and visitor. Among these may be mentioned the collection from the West Indies, the musical instruments of the Incas, the case containing a great variety of animal forms in pottery; collections of feather-work from Peru, Bolivia, Paraguay and Brazil, and the collection from Columbia consisting of many objects in pottery, stone and shell.

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